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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/008,571

12/03/2001

Ian Tomlinson

8039/1125

6655

29933

7590

05/26/2005

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EXAMINER

TRAN, MY CHAU T

ART UNIT

PAPER NUMBER

1639

DATE MAILED: 05/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/008,571

Applicant(s)

TOMLINSON ET AL.

Examiner

MY-CHAU T. TRAN

Art Unit

1639

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 February 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-53 is/are pending in the application.
- 4a) Of the above claim(s) 1-10, 12-16 and 18-53 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 11 and 17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☒ Certified copies of the priority documents have been received in Application No. 09/888,313.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 4/15/02.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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DETAILED ACTION

Application and Claims Status

1. Applicant's response filed 02/03/2005 is acknowledged and entered.
2. Claims 1-53 are pending.

Election/Restrictions

3. Applicant's election of Group III (Claims 11, 17, 46, 48, and 50) in the reply filed on 10/06/2004 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).
4. Claims 1-10, 12-16, 18-45, 47, 49, and 51-53 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to *nonelected inventions*, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 10/06/2004.
5. Applicant's election of Group A (Claims 11 and 17) in the reply filed on 02/03/2005 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Art Unit: 1639

6. Claims 46, 48, and 50 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to *a nonelected invention*, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 02/03/2005.

7. Claims 11, and 17 are treated on the merit in this Office Action.

Priority

8. It is noted that this instant application is a CIP of 09/888,313 filed 06/22/2001, which claims benefit to a provisional application, 60/246,851 filed 11/08/2000, under 35 U.S.C 119(e). Application 09/888,313 also claims for foreign priority based on two applications filed in United Kingdom on 10/25/2000 and 6/23/2000. However, no certified copies of the foreign priority documents have been received in the application of 09/888,313. Thus, the instant application is granted the benefit of priority for the provisional application, 60/246,851 filed 11/08/2000.

Information Disclosure Statement

9. The information disclosure statement(s) (IDS) filed on 04/15/2002 has been reviewed, and its references have been considered as noted on PTO-1449 form(s).

10. Claims 11, and 17 are treated on the merit in this Office Action.

Claim Rejections - 35 USC § 112

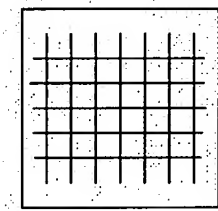
11. The following is a quotation of the second paragraph of 35 U.S.C. 112:

Art Unit: 1639

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

12. Claims 11, and 17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

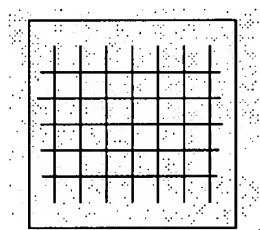
a. The limitation that the “*first and second repertoires of single chain polypeptides are present on a solid surface in a first and second series of continuous, non-intersecting lines, respectively, such that each line of said first series intersects with each line of said second series, such that members of the first repertoire are juxtaposed members of the second repertoire*” of claim 11 is vague because it is unclear the intersection of the lines would generate a two-chain polypeptide. As claimed, the array format is



wherein the lines on the x-axis is the “*first repertoires of single chain polypeptides*” and the lines on the y-axis is the “*second repertoires of single chain polypeptides*”, and the intersection of the lines would result in a single amino acid interaction of the polypeptide chains. Thus, the limitation that the “*first and second repertoires of single chain polypeptides are present on a solid surface in a first and second series of continuous, non-intersecting lines, respectively, such that each line of said first series intersects with each line of said second series, such that members of the first repertoire are juxtaposed members of the second repertoire*” is vague.

Art Unit: 1639

b. The limitation that the “*first, second, and third repertoires Of single chain polypeptides are present on a solid surface in a first, second, and third series of continuous, non-intersecting lines, respectively, such that each line of said first series intersects with each line of said second and third series, each line of said second series intersects with each line of said first and third series, and each line of said third series intersects with said first and second series, such that members of the first, second and third repertoires are juxtaposed to each other*” of claim 17 is vague because it is unclear the intersection of the lines would generate a three-chain polypeptide. As claimed, the



array format is wherein the lines on the x-axis is the “*first repertoires of single chain polypeptides*” and the lines on the y-axis is the “*second repertoires of single chain polypeptides*”, and the lines on the z-axis or lines that are ‘diagonal’ to the x-axis or y-axis is the “*third repertoires of single chain polypeptides*”. The intersection of these lines would result in a single amino acid interaction of the polypeptide chains.

Thus, the limitation that the “*first, second, and third repertoires Of single chain polypeptides are present on a solid surface in a first, second, and third series of continuous, non-intersecting lines, respectively, such that each line of said first series intersects with each line of said second and third series, each line of said second series intersects with each line of said first and third series, and each line of said third series intersects with said first and second series, such that members of the first, second and third repertoires are juxtaposed to each other*” is vague.

Claim Rejections - 35 USC § 103

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

15. Claims 11, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Winkler et al. (US Patent 5,677,195) and Wagner et al. (US Patent 6,329,209 B1).

Winkler et al. disclose a method and device for forming large arrays of polymers on a substrate (see e.g. Abstract; col. 2, lines 15-55; col. 2, line 63 thru col. 3, line 10; col. 7, lines 50-55). Winkler et al. disclose to different method for forming large arrays of polymers on a substrate, which are the flow channel method and the "spotting" method (see e.g. col. 8, lines 64 thru col. 10, line 12; figs. 1, 7 (A and B), and 11A). The flow channel method comprises a) providing a substrate comprises a plurality of channel paths form on the x-axis of the substrate and a plurality of channel paths form on the y-axis of the substrate, b) flowing the first reagents

Art Unit: 1639

along the plurality of channel paths form on the x-axis of the substrate for immobilization of the reagent onto the substrate, c) flowing the second reagents along the plurality of channel paths form on the y-axis of the substrate for the 'coupling' of the second reagent with the first reagent at the intersection of the two channel paths, i.e. the channel paths form on the x-axis and the channel paths form on the y-axis, d) forming the large arrays of polymers at selected regions on a substrate (see e.g. col. 8, lines 64 thru col. 10, line 12; col. 10, line 14 thru col. 11, lines 63; figs. 1, 7 (A and B), and 11A). Additionally, Winkler et al. disclose a method wherein small "strips" of reagents are applied to the substrate by stripping the substrate with a pipettor (see e.g. col. 14, lines 10-15). The substrate includes materials such polystyrene in the form of gels, pads, or sheets (see e.g. col. 10, lines 17-26; col. 14, lines 45-49). The reagents include biological material such as peptides (see e.g. col. 5, lines 32-41; col. 8, lines 8-11).

The method of Winkler et al. differs from the presently claimed invention by failing to include immobilizing a single chain polypeptide on the solid support.

Wagner et al. disclose an array of protein capture agents on a solid support and the method of forming the array of protein capture agents on a solid support (see e.g. Abstract; col. 2, line 63 thru col. 3, line 9; col. 3, line 58 thru col. 4, line 2; col. 9, lines 58-65). The method of forming the array of protein capture agents on a solid support comprises the step of immobilizing the protein capture agents on a solid support via spotting method such as microprinting techniques and ink-jet printing technique (see e.g. col. 3, line 58 thru col. 4, line 2; col. 23, lines 10-37). The type of protein capture agents includes biological materials such as protein fragments and antibody fragments (see e.g. col. 4, lines 48-67; col. 5, line 34 thru col. 6, line 40).

Art Unit: 1639

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to include immobilizing a single chain polypeptide on the solid support as taught by Wagner et al. in the method of Winkler et al. One of ordinary skill in the art would have been motivated to include immobilizing a single chain polypeptide on the solid support in the method of Winkler et al. for the advantage of providing a rapid methods of preparing diverse polymer arrays with less processing step (Winkler: col. 11, lines 21-63) since both Winkler et al. and Wagner et al. disclose the spotting method for forming an array of polymers (Winkler: col. 9, lines 59 thru col. 10, line 12; Wagner: col. 23, lines 10-37). Furthermore, one of ordinary skill in the art would have reasonably expectation of success in the combination of Winkler et al. and Wagner et al. because Winkler et al. disclose that the striping method, i.e. forming lines on the substrate, is similar to the spotting method (Winkler: col. 14, lines 10-15). Thus the methodology of forming spots or lines on the substrate would be a choice of experimental design and is considered within the purview of the cited prior art.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to My-Chau T. Tran whose telephone number is 571-272-0810. The examiner can normally be reached on Monday: 8:00-2:30; Tuesday-Thursday: 7:30-5:00; Friday: 8:00-3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew J. Wang can be reached on 571-272-0811. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1639

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

mct
May 25, 2005


PADMASHRI PONNALURI
PRIMARY EXAMINER